CLAIMS

What is claimed is:

1. An aircraft component comprising:

a first section adapted to be attached at an exterior surface of an aircraft to close an access opening through the exterior surface; and

a second section extending outward from the first section and forming at least one heat transfer surface to transfer heat from the first section to air passing by the exterior surface and second section,

wherein the first and second sections are integrally formed as a one-piece member.

2. An aircraft component as in claim 1 further comprising a heat sink comprising the first and second sections, and wherein a third section is provided which at an inward facing side with a connection section adapted to have housing walls attached to the connection section to form a housing for an electronic device.

3. An aircraft component as in claim 2 wherein the aircraft component is comprised of ferromagnetic material to form an electromagnetic interference (EMI) shielding member.

4. An aircraft component as in claim 1 wherein the first section comprises a perimeter flange with fastener mounting holes therethrough.

5. An aircraft component as in claim 1 wherein the at least one heat transfer surface comprises a plurality of heat transfer fins.

6. An aircraft electronic device comprising:

electronic circuitry comprising at least one printed circuit board; and

a housing having the electronic circuitry located in the housing, the housing comprising the aircraft component **as in claim 1** forming a first housing member and at least one other housing member attached to the aircraft component to form an enclosure housing the electronic circuitry.

7. An aircraft electronic device as in claim 6 wherein the electronic circuitry comprises an airborne microwave modem assembly.

8. An aircraft electronic device as in claim 6 wherein the electronic circuitry comprises digital signal encrypting and compression electronics.

9. An aircraft comprising:

a drive unit;

an air frame comprising at least one airfoil, the drive unit being attached to the air frame; and

an aircraft electronic device **as in claim 6** connected to the airfoil.

10. An aircraft as in claim 9 wherein the airfoil is a wing of the aircraft, and wherein the at least one heat transfer surface extends from a bottom side of the wing.

11. An aircraft electronic device comprising:

electronic circuitry which generates heat; and

a housing having the electronic circuitry located in the housing, the housing comprising a first wall member with a heat sink section that extends in an outward direction at an outer side of the first wall member, and a connection section located at an inner side of the first wall member, wherein other walls of the housing are attached to the connection section to form an enclosure housing the electronic circuitry, and wherein the first wall member further comprises a flange extending from the connection section and adapted to be attached to an exterior side of the aircraft.

12. An aircraft electronic device as in claim 11 wherein the heat sink section comprises heat transfer fins extending in the outward direction.

13. An aircraft electronic device as in claim 11 wherein the electronic circuitry comprises at least one printed circuit board, and the housing comprises heat rail and card slot members on opposite sides of the printed circuit board, wherein sides of the printed circuit board are attached to the heat rail and card slot members, and wherein the heat rail and card slot members are attached to the inner side of the first wall member.

14. An aircraft electronic device as in claim 11 wherein the electronic circuitry comprises an airborne microwave modem assembly.

15. An aircraft electronic device as in claim 11 wherein the electronic circuitry comprises an airborne link interface assembly comprising digital signal encryption and compression electronics.

16. An aircraft electronic device as in claim 11 wherein the flange comprises a perimeter flange which surrounds the connection section, and wherein the flange comprises holes adapted to receive fasteners to attach the flange to the exterior side of the aircraft.

17. An aircraft electronic device as in claim 11 wherein the connection section of the first wall member comprises a wedge shaped section adapted to have the other walls of the housing located thereon.

18. An aircraft electronic device as in claim 11 wherein the housing, including the first wall member, forms an electromagnetic interference (EMI) shield surrounding the electronic circuitry.

19. An aircraft electronic device as in claim 11 further comprising an electromagnetic interference (EMI) shield surrounding the electronic circuitry, the EMI shield comprising the first wall member.

20. An aircraft comprising:

a drive unit;

an air frame comprising at least one airfoil, the drive unit being attached to the air frame; and

an electronic communications device connected to the air frame, wherein the electronic communications device comprises a printed circuit board and a

housing, wherein the housing has a first side section connected at an exterior side of the airfoil to close an access opening through the airfoil, and wherein the first side section of the housing forms a wall of an enclosure for the printed circuit board.

21. An aircraft as in claim 20 wherein the first side section comprises a heat sink located in the access opening of the airfoil.

22. An aircraft as in claim 21 wherein the heat sink comprises heat transfer fins extending outward from the airfoil.

23. An aircraft as in claim 20 wherein the housing forms an electromagnetic interference (EMI) shield around the printed circuit board.

24. An aircraft as in claim 20 wherein the first side section comprises a perimeter flange with holes therethrough for attaching the first side section to the exterior side of the airfoil.

25. An aircraft as in claim 20 wherein the first side section forms a structural and contour component for the airfoil.

26. A method of assembling an electronic device with an aircraft comprising steps of:

providing the electronic device with a housing having a side with a heat sink;

inserting the electronic device into an access aperture in the aircraft; and

attaching the side of the housing of the electronic device to the aircraft to close the access aperture, wherein the heat sink is located in the access aperture.